

MINIMAL BARRIER CONFIGURATION

December 6, 2005

PURPOSE OF CONFIGURATION

This configuration would provide a substantial amount of created saline habitat areas along the outer portions of the Salton Sea to replace the eventual loss of the Sea's existing shallow water and shoreline habitat. These saline habitat areas would be created along the shoreline areas as the Sea recedes. Air quality management would also be included for exposed playa that may be emissive.

DESCRIPTION OF CONFIGURATION AND FACILITIES NEEDED

The Minimal Barrier Configuration includes the following major features:

- ❖ **Saline Habitat Complex:** Up to 75,000 acres of habitat would be constructed within the existing seabed. Berms and related facilities would be used to create numerous cells (approximately 1,000 acres each) that contain saline habitat of varying depths, salinities, and structural features, simulating historical conditions. (*See Habitat Summary Sheet for additional information.*)

Water control facilities would be used to convey water in/out and within the Saline Habitat Complex. Canals would also be constructed to provide brackish water to the Saline Habitat Complex and to enhance circulation and salinity management within the southern portion of the Shoreline Sea area. A pump station would be required to convey higher salinity water from the Brine Sink to a blending structure, where saltwater and freshwater would be mixed to supply brackish water to the Saline Habitat Complex. (*See Infrastructure and Conveyance Summary Sheet for additional information.*)

- ❖ **Shoreline Sea:** A portion of the inflows from the New and Alamo Rivers would be mixed with saline water from the brine sink and discharged into the Shoreline Sea area. This mixing of inflows with brine water is needed to achieve the minimum target salinity (20,000 milligrams per liter [mg/L]) for the Saline Habitat Complex. The Shoreline Sea area would also provide connectivity between drains that discharge to the Sea for desert pupfish. Berms and related facilities would be needed to form the Shoreline Sea area.
- ❖ **Brine Sink:** The Brine Sink would provide the "outlet" necessary to manage the elevation and salinity in the Saline Habitat Complex and Shoreline Sea area.
- ❖ **Air Quality Management Area:** Excavated canals would be constructed along the eastern, western, and southern edges of the Salton Sea to provide desilted, brackish water for managed vegetation in the Air Quality Management areas. (*See Air Quality Management Summary Sheet for more information.*)

- ❖ **Water Quality Management:** Water treatment plants may be needed to remove nutrients and selenium from inflows for water supplied to the Saline Habitat Complex.

HOW THE CONFIGURATION WORKS

- ❖ A portion of the inflows from the New and Alamo Rivers would be discharged into a saline water body along the southern shoreline. Water from the Brine Sink would be blended with these inflows to maintain salinity in this saline water body.
- ❖ The saline water body serves as the inflow to the Saline Habitat Complex.
- ❖ Several canals also convey inflow water to other Saline Habitat Complex areas or air quality management areas.
- ❖ Water from the Whitewater River flows into a saline water body along the northern shoreline for similar distribution to created Saline Habitat Complex areas.
- ❖ To maintain target salinities for habitat purposes, water is routed to the Brine Sink after use in the Saline Habitat Complex.
- ❖ Water from the New and Alamo Rivers is blended with saline water to irrigate vegetation on exposed playa that is emissive.
- ❖ Canals and other conveyance facilities are designed to carry water to the air quality management and created habitat areas.

Main Characteristics After 75 Years:

Based on inflows of 650,000 acre-feet

Saline Habitat Complex:

- ❖ Salinity: 20,000 to 60,000 mg/L
- ❖ Surface area: Up to 75,000 acres

Shoreline Sea:

- ❖ Salinity: 20,000 to 35,000 mg/L
- ❖ Surface area, northern: 2,000 acres
- ❖ Surface area, southern and western: 9,000 acres

Brine Sink:

- ❖ Salinity: Much greater than 200,000 mg/L
- ❖ Elevation: -265 to -275 feet msl
- ❖ Surface area: 22,000 acres

Air Quality Management:

- ❖ Total area of exposed playa: 135,000 acres
- ❖ Area with irrigated vegetation: 67,500 acres (50 percent of total area)

Estimated Capital Cost: \$7.3 billion

WHAT HAPPENS IF AVERAGE ANNUAL INFLOWS ARE GREATER THAN 650,000 ACRE-FEET?

The additional inflow water can be used for more Saline Habitat Complex or be conveyed to the Brine Sink. If the additional inflows are conveyed to the Brine Sink, the size of the Brine Sink would increase. The larger Brine Sink or larger Saline Habitat Complex area will reduce the exposed playa and the amount of air quality management area.

CAN THE NUMBER OR COMPLEXITY OF FACILITIES BE REDUCED?

This configuration could be simplified by reducing the quantity of the Saline Habitat Complex. Non-contiguous habitat areas, such as those on the west shore, require additional canals and systems not used by other areas.

Maintaining the salinity of the Shoreline Sea similar to inflow salinities could also simplify and reduce the number of facilities needed. Maintaining a minimum of 20,000 mg/L salinity requires blending of inflows with salt water from the Brine Sink area.

The additional canals and infrastructure to support the air quality management may be simplified in the future as well. If the exposed playa is not emissive, the need for irrigated vegetation or other dust controls would be reduced.

This configuration could also be simplified by eliminating water treatment plants. Upstream control of nutrients and selenium may reduce the need for water treatment.

